

Joint Machinery Ownership

File A3-34

Many farmers have reduced their machinery costs by owning equipment jointly. This helps smaller operators utilize machinery more efficiently and still enjoy the convenience of owning a full line of equipment. It also helps younger operators get started with less capital tied up in machinery.

The key to successful joint ownership is for the partners to be able to agree on when and how to use each piece of equipment. Depending on weather and crop conditions, decisions may have to be made on a day-to-day basis. The objective is to complete field work for all partners in a timely manner while minimizing the time spent transporting machinery from farm to farm.

All parties should have a written agreement explaining how the joint ownership will be dissolved in case of disagreement or termination of farming by one party. The agreement also should explain how to determine the value of the machinery at the time of dissolution.

Sharing Costs

Costs of jointly owned machinery should be shared equitably. Many owners prefer to own machinery on a 50-50 basis and provide fuel and labor for use on their own acres. If each owner uses the machinery over approximately the same number of acres, this arrangement works well. Repair costs, financing payments, cash boot to trade, and income tax deductions also can be divided equally.

Unequal Use

When one owner uses a machine over more acres than the other, however, different arrangements are needed. For example, Al and Chris purchased a combine together that will be used to harvest 1,000 acres for Al and 500 acres for Chris. Both will provide their own fuel and labor. The easiest arrangement is for Al to own two-thirds of the combine and Chris one-third. Al also would pay for two-thirds of the repairs and other maintenance costs.

Example 1.

- Al and Chris jointly purchase a combine for \$180,000. They agree to each contribute \$40 per acre to a special combine account.

Al: \$40 per acre × 1,000 acres =	\$ 40,000
Chris: \$40 per acre × 500 acres =	<u>20,000</u>
	\$ 60,000

- The following expenses are paid from the account.

Fuel and lubrication	\$ 12,000
Repairs and maintenance	8,250
Labor (hours per acre at \$25 per hour)	
(300 hours paid to Al)	7,500
(150 hours paid to Chris)	3,750
Depreciation, interest, insurance, and housing (16% of value of combine)	
(paid to Al)	13,500
(paid to Chris)	<u>13,500</u>
	\$ 58,500

- The excess funds can be carried over to the following year or refunded in proportion to each partner's use of the combine.

Income	\$60,000
Costs	<u>58,500</u>
Excess	\$ 1,500

But what if the partners use the machine in a proportion different from their ownership share? One method is for both owners to contribute to a special machinery account (Example 1). The amount contributed is equal to a typical custom rate multiplied by each person's acres. If labor and fuel are furnished by each operator, use a rate equal to about 70-80% of the custom rate. All machinery-related expenses such as maintenance, repairs, and insurance are paid from this account. Depreciation and interest should be paid to each owner in proportion to the original investment. Or, financing payments can be paid directly from the fund. At year end, any excess or deficit in the account is carried over to the following year or refunded in proportion to each owner's actual use.

Another common procedure is for the partner with the most acres to reimburse the other owner for the extra use. To calculate the amount of compensation, multiply the custom rate by the number of acres by which one owner's share exceeds half the total. As noted above, the custom rate should be reduced by 20-30% if labor and fuel are furnished by each owner.

In Example 2, Al pays Chris \$30 per acre (75% of a \$40 custom rate) for each acre on which he uses the combine in excess of half the total. In this example, half of the 1,500 total acres is 750. Al's acres exceed this by 250, so the total payment from Al to Chris would be $\$30 \times 250$ acres, or \$7,500.

Example 2.

Al and Chris purchase a used combine jointly, each paying half of the purchase cost of \$180,000.

The combine is used on 1,500 acres, 1,000 by Al and 500 by Chris.

Both furnish their own fuel and labor, and repair costs are divided equally.

1. Assume that the remaining costs, excluding fuel and labor, are equal to 75% of the custom rate.

$$\$40 \text{ per acre} \times 75\% = \$30 \text{ per acre}$$

2. Al's ownership share is 50%. Half the total acres is 750. However, Al uses the combine on 250 extra acres beyond this.

$$1,000 \text{ acres} - 750 \text{ acres} = 250 \text{ acres}$$

3. Al pays Chris \$30 for each extra acre.

$$\$30 \text{ per acre} \times 250 \text{ acres} = \$7,500$$

If the jointly owned implement is not self-propelled and is pulled behind each operator's own tractor, the rental value of the tractor also should be subtracted from the custom rate (Example 3). Average custom rates and tractor rental charges can be found in Iowa State University Extension and Outreach publication FM1698/AgDM A3-10: [Iowa Farm Custom Rate Survey](http://www.extension.iastate.edu/agdm/crops/pdf/a3-10.pdf), www.extension.iastate.edu/agdm/crops/pdf/a3-10.pdf.

Example 3.

Al and Chris also purchased a no-till soybean drill for \$40,000, each paying half. Al used it on 400 acres, Chris on 200 acres. Each supplied the tractor to pull it, a driver, and fuel. They agreed on a custom rate charge of \$18 per acre.

1. Multiply the custom rate by 70% to exclude fuel and labor.

$$\$18 \text{ per acre} \times 70\% = \$12.60 \text{ per acre}$$

2. They used a 180-horsepower tractor to pull the drill. The average rental rate for tractors is \$.27 per horsepower-hour, so the hourly charge is:

$$180 \text{ hp} \times \$0.27 = \$48.60 \text{ per hour}$$

3. At the rate of 7 acres drilled per hour, the tractor charge per acre is:

$$\$48.60 / 7 \text{ acres per hour} = \$6.94 \text{ per acre}$$

4. The charge for the use of the drill is:

$$\$12.60 - \$6.94 = \$5.66 \text{ per acre}$$

5. Half the total acres (Al has 50% ownership) on which the drill was used is 300. Al used it on 100 acres more than this, so he pays Chris \$566.00.

$$\$5.66 \times 100 \text{ acres} = \$566.00$$

Actual Costs

In cases where some costs are divided differently than others, a complete list of actual costs and who paid them is needed.

Again, assume that Al combines 1,000 acres and Chris 500 acres, and they have equal ownership of the combine. Depreciation, interest, and insurance costs are divided equally. They both supply their own fuel and labor, but Chris stores the combine (estimated cost of .5% of the investment) and does all the repairs and maintenance (Example 4). At the end of the year, all costs are totaled and redivided in proportion to the number of acres on which each person used the machine. In Example 4, the total cost of interest, depreciation, insurance, housing, and repairs amounts to \$35,250 for the year, or \$23.50 per acre. Of this, Al paid \$13,050 and Chris paid \$22,200. For the expenses to be divided in proportion to usage, that is \$23,500 for Al and \$11,750 for Chris, Al must pay Chris (\$22,200 minus \$11,750), or \$10,450.

Example 4.

Al and Chris purchase a used combine jointly, each paying half of the \$180,000 cost. Al harvests 1,000 acres, Chris harvests 500 acres. They both provide labor and fuel for their own acres, but Chris stores the combine and performs or pays for all repairs.

	Total	Al	Chris
1. Investment or current value of machine	\$180,000	\$90,000	\$90,000
2. Annual interest charge (6%)*	10,800	5,400	5,400
3. Depreciation (8%)*	14,400	7,200	7,200
4. Insurance (.5%)	900	450	450
5. Housing (.5%)	900	0	900
6. Fuel, lubrication (both pay their own)	NA	NA	NA
7. Repairs and maintenance	8,250	0	8,250
8. Labor (both supply their own)	NA	NA	NA
9. Total of costs not shared in proportion to use (sum of lines 2 through 8)	\$35,250	\$13,050	\$22,200
10. Annual use (acres, hours, etc.)	1,500 acres	1,000 acres	500 acres
11. Cost per acre or hour (line 9/line 10)	\$23.50		
12. Cost to each owner (line 10 × line 11)		\$23,500	\$11,750
13. Reimbursement (line 9 minus line 12) ** (Al pays Chris \$10,450)		\$-10,450	\$+10,450

* Principal and interest payments can be substituted for depreciation and interest charges.

**The owner(s) for which line 13 is negative pays that amount to the owner(s) for which line 13 is positive.

Use Decision Tool, [Joint Machinery Ownership](http://www.extension.iastate.edu/agdm/crops/xls/a3-34jointmach.xlsx), www.extension.iastate.edu/agdm/crops/xls/a3-34jointmach.xlsx to compute each party's cost of jointly owning machinery.

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